



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
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Canada

Tel (613) 632-5200
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D4131-043
Job Sheet 188538



Part No: D4131-043

Job Qty: 6 pcs

Part Name: Doubler Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/10/19

Job Tracking No:

Due Date: 1/25/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG REV C SHEETS 2,9 IPP Rev:A 10.10.06 new issue DD verf:EC

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Waterjet - Flow - 1	6 pcs		1/25/19	0.00	0.67	Waterjet - Flow		Se Nov 16
120	QC 8	6 pcs		1/25/19	0.00	0.00	QC 8 - 12		
							QC 8 - 14		
							QC 8 - 17		
							QC 8 - 20		
							QC 8 - 25		
							QC 8 - 3		
							QC 8 - 32		
							QC 8 - 33		
							QC 8 - 35		DAS
							QC 8 - 38		38
							QC 8 - 39		8-88
							QC 8 - 4		
							QC 8 - 44		
							QC 8 - 45		
							QC 8 - 49		
							QC 8 - 58		
							QC 8 - 8		
							QC 8 - 9		
							QC 8 - 68		
							QC 8 - 67		
							QC 8 - 1 (A)		
130	Small Fab - 2 - B4B	6 pcs		1/25/19	0.00	0.38	Small Fab - 1 - B4B		
							Small Fab - 2 - B4B		
							Small Fab - 3 - B4B		DAS
							Small Fab - 4 - B4B		36
							Small Fab - 5 - B4B		9-88
							Small Fab - 6 - B4B		
							Small Fab - 7 - B4B		
150	QC 5	6 pcs		1/25/19	0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 38	
				QC 5 - 42	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	JAN 29 2019 DAS 68
				QC 5 - 9	9-89
				QC 5 - 50	
				QC 5 - 30	
160 Handfinish - 1-1 Chemical-B4B	6 pcs	1/25/19	0.00 0.34	Handfinish - 1 - 1 - B4B	
				Handfinish - 1 - 2 - B4B	
				Handfinish - 1 - 3 - B4B	
				Handfinish - 1 - 4 - B4B	
				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
				Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	D.R 19/01/29
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				2Handfinish - 1 - 22 - B4B	
161 QC 7	6 pcs	1/25/19	0.00 0.00	QC 7 - 10	
				QC 7 - 13	
				QC 7 - 14	
				QC 7 - 15	
				QC 7 - 17	
				QC 7 - 18	
				QC 7 - 19	
				QC 7 - 2	
				QC 7 - 28	
				QC 7 - 3	
				QC 7 - 30	
				QC 7 - 34	DAS 36
				QC 7 - 36	
				QC 7 - 37	9-89
				QC 7 - 38	
				QC 7 - 41	
				QC 7 - 47	
				QC 7 - 48	
				QC 7 - 51	
				QC 7 - 58	
				QC 7 - 59	
				QC 7 - 6	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
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LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	
165	Small Fab - 2 - B4B	6	1/25/19	0.00 0.38	Small Fab - 1 - B4B	
	pcs				Small Fab - 2 - B4B	
					Small Fab - 3 - B4B	DAS
					Small Fab - 4 - B4B	36
					Small Fab - 5 - B4B	9-89
					Small Fab - 6 - B4B	
					Small Fab - 7 - B4B	
166	QC 5	6	1/25/19	0.00 0.00	QC 5 - 10	
	pcs				QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 38	
					QC 5 - 42	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	DAS
					QC 5 - 68	JAN 30 2019 68
					QC 5 - 9	9-89
					QC 5 - 50	
					QC 5 - 30	
180	Packaging 3-1 - Stock - B4B	6	1/25/19	0.00 0.00	Packaging 3 - 1 - B4B	
	pcs				Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	51079 X JAN 30 2019
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐						Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : ☐ _____									

				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
190 QC 21 - SA	6	1/25/19	0.00 0.00	QC 21 - SA - 21	
	pcs			QC 21 - SA - 70	

Part Op 100 - 1-Cut D4131-7 as per Dwg Dwg Rev: _____ Prog Rev: _____ 2-Debur as required

Descriptions: 120 - QC8- Inspect parts - second check

130 - Small Fab - COUNTER SINK AS PER DWG Debur if necessary.

150 - QC5- Inspect part completeness to step on W/O

160 - Chemical Conversion Coat per QSI005 4.1

161 - QC7-Inspect Chemical Conversion Coat

165 - Small Fab - ASSEMBLE NUT PLATES AS PER DWG

166 - QC5- Inspect part completeness to step on W/O

180 - Identify as per dwg & Stock Location: _____

190 - QC21- Final Inspection - Work Order Release

DAS
21 JAN 30 2019
9-55

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M6061T6S.063	6061-T6 .063 Sheet	1.0842 sf (.1807 ea)	100-Waterjet - Flow - 1	5136472
MS20426AD3-3	Rivet	48 Ea (8 ea)	165-Small Fab - 2 - B4B	5018535
MS21069L3	Anchor Nut	24 Ea (4 ea)	165-Small Fab - 2 - B4B	5050044

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Waterjet - Flow - 1	M6061T6S.063	1	102	0
165-Small Fab - 2 - B4B	MS20426AD3-3	48	2,448	0
	MS21069L3	24	82	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Doubler Assembly	0.098Inches + 0.004 - 0.001	0.102 0.097	0.100	Diameter
2	Doubler Assembly	0.191Inches + 0.005 - 0.001	0.196 0.190	0.192	Diameter
3	Doubler Assembly	0.250Inches ± 0.010	0.260 0.240	0.248	
4	Doubler Assembly	0.500Inches ± 0.010	0.510 0.490	0.499	
5	Doubler Assembly	0.405Inches ± 0.010	0.415 0.395	0.403	
6	Doubler Assembly	0.405Inches ± 0.010	0.415 0.395	0.402	
7	Doubler Assembly	0.590Inches ± 0.030	0.620 0.560	0.567	
8	Doubler Assembly	0.660Inches ± 0.030	0.690 0.630	0.662	
9	Doubler Assembly	3.640Inches ± 0.030	3.670 3.610	3.637	
10	Doubler Assembly	4.000Inches ± 0.010	4.010 3.990	4.002	
11	Doubler Assembly	4.100Inches ± 0.030	4.130 4.070	4.101	
12	Doubler Assembly	4.810Inches ± 0.030	4.840 4.780	4.813	
13	Doubler Assembly	4.600Inches ± 0.010	4.610 4.590	4.604	
14	Doubler Assembly	5.410Inches ± 0.030	5.440 5.380	5.408	
15	Doubler Assembly	0.063Inches ± 0.010	0.073 0.053	0.060	

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Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS																																																														
Part No. _____		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																											
NCR No. _____		Scrap ☐		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																											
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				Large Fab ☐	Composite ☐	Supplier ☐																																																												
Date: _____		Step #: _____ Effective: _____					MRB (QSI042) Approval																																																											
Description Work Order Deviation		Disposition					Completed By																																																											
Dart Aerospace Ltd. 1270 Aberdeen Street Hawkebury, ON K6A 1K7 CANADA TEL: 1 813 832-5200 Email: sales@dartero.com www.dartero.com DART AEROSPACE Container No: S145342 Part: D4131-043 Job No: 188538 Serial No/Batch: S145342 Revision: _____ Inspector: _____ Exp Date: _____ Instructions: Various STC's Date: 01/16/19							Lead hand / Supervisor Approval Verification																																																											
							QC / QA Coordinator Approval																																																											
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